



# THE ATMOSPHERIC RESERVOIR

*Examining the Atmosphere and Atmospheric Resource Management*

## Weather modification organizations hold annual meetings

By Darin Langerud

Man's attempts to modify the weather have been around for centuries. Whether it was ringing church bells to ward off severe weather, or conducting ritualistic ceremonies to summon rain, there has always been a keen interest in trying to influence Mother Nature. Not until the 1940's, however, was a scientific method for influencing the weather realized. Through research at the General Electric Labs in Schenectady, New York, Drs. Vince Schaefer and Bernard Vonnegut found that dry ice and silver iodide could be used to produce ice in cold clouds and influence precipitation.

Since then, operational cloud seeding programs have popped up all over the western U.S. and around the world. Presently, ten western states have on-going cloud seeding programs.

During the past half-century, two organizations committed to the development of cloud seeding science and operations were formed. The Weather Modification Association (WMA), composed primarily of contractors and scientists was established in 1950. The North American Interstate Weather Modification Council (NAIWMC), an association of states interested in regulation, operations, and furthering scientific knowledge through research, was established in 1975. Both conducted their annual meetings in Reno, Nevada on April 24<sup>th</sup> – 26<sup>th</sup> with many interesting topics from

research to regulation soliciting discussion.

Of the more interesting topics receiving attention was an evaluative study by Drs. William Woodley and Daniel Rosenfeld whereby they developed an objective method for the evaluation of non-randomized (meaning all suitable clouds are subject to seeding) cloud seeding programs in Texas. Using the National Weather Service NEXRAD weather radar data, their method incorporates a computer program which selects a "control cloud" (a cloud which is never seeded) match for a seeded cloud and compares their rainfall rates over their lifetimes.

Of the two programs reviewed, one (54 percent) showed increases more than twice as large as the other (24 percent), but both showed positive increases in the seeded clouds.

Another important finding is that the results appeared to be much more positive if seeding was conducted within the first hour of the cloud's lifetime, a result which would confirm one of the theories on which cloud seeding operates.

Another topic receiving considerable attention was the Weather Damage Modification Program (WDMP), a federally sponsored cloud seeding research initiative. Congress created the WDMP with a \$2 million earmark for fiscal year 2002, however, a reprogramming

effort by the U.S. Bureau of Reclamation currently has the program in limbo. Provided the program is continued and funded for this year, North Dakota would seek to obtain some of those funds to conduct research and evaluation efforts to increase the physical understanding of cloud seeding and improve its operational application.

It is the intent of the NAIWMC to establish the WDMP as a multi-year effort to assist the research effort in states with cloud seeding operations. The fiscal year 2003 request for the WDMP is \$3.5 million and received strong support from the Congressional delegations of NAIWMC member states earlier this spring.

With continued funding, the WDMP could provide the means for the development of additional evaluation methods as discussed earlier, or provide other important breakthroughs in scientific understanding which could greatly improve the efficacy of on-going operations. The NAIWMC and WMA will be working toward this goal now and into the future to ensure that it becomes a reality. ■

Atmospheric Resource Board  
North Dakota State Water Commission  
900 East Boulevard, Bismarck, ND 58505  
701) 328-2788  
Internet: <http://www.swc.state.nd.us/ARB/>  
ND Weather Modification Association  
PO Box 2599, Bismarck, ND 58502  
701) 223-4232